Weilun Sun

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EDUCATION

Bachelor of Science
2010–2014(expected)

Computer Science & Technology
Tsinghua University, Beijing, China
Overall GPA: 88.3/100

RESEARCH EXPERIENCE

Anisotropic Spherical Gaussians
Febuary – May 2013

SIGGRAPH Asia 2013 Technical Paper
Graphics & Geometry Computing Group, TNList, Tsinghua University
Mentor: Kun Xu

- Involved in the investigation of the form of *Anisotropic Spherical Gaussians* (ASGs for short).
- Implemented a *Precomputed Radiance Transfer* rendering program based on theories in the paper.
- Proofread derivation of the closed form integral and the convolution expression of ASGs.
- Made most of result figures in the paper.

Sketch2Scene
September 2012 – January 2013

SIGGRAPH 2013 Technical Paper
Graphics & Geometry Computing Group, TNList, Tsinghua University
Mentor: Kun Xu

- Reproduced a single-model retriever based on paper *Sketch-based Shape Retrieval* of SIGGRAPH 2012.
- Implemented part of the GUI of the project system.
- Involved in the discussion of the co-retrieval methods in the paper.

Graduation Project of Yan Gu (second year PhD candidate at CMU now)
March – May 2012

Student Research Training Program
Graphics & Geometry Computing Group, TNList, Tsinghua University
Mentor: Kun Xu

- Reproduced main algorithm of SIGGRAPH Asia 2009 paper *All-Frequency Rendering of Dynamic, Spatial-Varying Reflectance*.

PUBLICATIONS

- "Anisotropic Spherical Gaussians,"
  Proceedings of SIGGRAPH Asia 2013(Accepted)
  Kun Xu, Wei-Lun Sun, Zhao Dong, Dan-Yong Zhao, Run-Dong Wu, Shi-Min Hu
- "Sketch2Scene: Sketch-based Co-retrieval and Co-placement of 3D Models,"
  Proceedings of SIGGRAPH 2013, ACM Transactions on Graphics 32(4) , 123:1–123:12, 2013.
  Kun Xu, Kang Chen, Hong-Bo Fu, Wei-Lun Sun, Shi-Min Hu

SMALL PROJECTS

Experiment of Clustering Methods
May 2013

Course Project of Introduction to Machine Learning

- Replaced k-means clustering used in paper *Sketch-Based Shape Retrieval* with different clustering methods including k-medoids and fitting Spherical Gaussians with EM algorithm.
- Derived approximate formulas needed to fit Spherical Gaussians with EM algorithm.
- Made simple comparisons among different methods by statistical and retrieval results.
- Rearranged code written for *Sketch2Scene* and implemented a complete software with GUI.

Simple 3D rigid body physics engine
January 11th – January 13th 2013

Course Project of Computer Graphics Real Time and Animation

- Implemented rigid body collision simulation between sphere and net or fixed objects in any shape with friction under gravity field.
- Took spinning into consideration.
- Simulated net system using rigid body spheres to represent knots and weightless stiff springs to represent cords.
- Created a basketball shooting game using the engine.(Cooperated with my classmate Yi-Ning Liu)

Fantastic Drummer
October – December 2012

Course Project of The Principles of Signal Processing
With Classmate Iat Chong Chan and Yi-Ning Liu

- Leader of the group.
- Implemented drum sound extraction and classification algorithm by Matlab.
- Developed a game on ios like Taiko Drum Master, but turns a new song into a game level automatically.
- Came up with the idea.

COMPUTER SKILLS

Programming Languages: c/c++, Java, Python, Matlab
Softwares & Applications: OPENCV, OPENGL, GLSL, QT, FLTK, Android, CUDA
Operating Systems: Windows, Linux

HONORS

2nd Place of Tsinghua Talent Show 2012

- Performed street soccer on stage.

First Prize of Beijing University Physics Olympiads 2011

INTERESTS

Street Soccer, Soccer (Midfielder of CST Department Soccer Team)